

IOWA STATE COLLEGE
OF AGRICULTURE AND MECHANIC ARTS
AMES, IOWA

DEPARTMENT OF GENETICS

January 23, 1952

Dr. Joshua Lederberg
Department of Genetics
University of Wisconsin
Madison 6, Wisconsin

Dear Dr. Lederberg:

As possibly you are aware we are attempting to have a Bio-Statistical Conference during this coming June and July. This conference is a joint effort of the Biometric Section of the American Statistical Association and the Iowa State College. The Iowa State College will reimburse the speakers for expenses so far as that is possible. In this matter we shall try to reimburse program participants for actual out-of-the-pocket expenses only, i.e., rail travel and living expenses while here. A local committee at Iowa State College has charge of the immediate arrangements. I enclose a copy of the tentative program and a partial list of invited program participants. The program is planned as an attempt to bring a biologist and a statistician together at each morning session in a discussion of a topic in Bio-Statistics. There will be a general discussion period on the same topic the same afternoon. Similar afternoon discussion periods proved quite helpful in clarifying the contents of papers presented at the morning sessions of the Ames Heterosis Conference during the summer of 1950. It is expected that the conference will bring together workers in the various biological sciences, statisticians, and those who are interested in statistics as a research tool. It is planned to publish the proceedings of the conference. We should be pleased to have you a member of the conference. We would like to have you speak on the general subject of "Analysis of genetic and population data on viruses and bacteria". My interest in your work makes me sure you will give us some very interesting data and discussion. The program is such that we would like this presentation on June 27.

Iowa State College is prepared to pay the actual traveling expenses of program participants to and from Ames in addition to a week's living expenses while in Ames.

Since it is imperative that the list of speakers be completed as quickly as possible would you kindly let us know whether you can participate at your earliest convenience. I hope you will be with us.

Sincerely yours,

John W. Gowen
John W. Gowen
Professor of Genetics

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BIostatISTICS CONFERENCE
June 16 - July 23, 1952
Iowa State College,
Ames, Iowa

A biostatistics conference has been scheduled for the first session of the 1952 Summer Quarter at Ames, sponsored by faculty members working in agriculture, biology and statistics at Iowa State College and by The Biometrics Society (ENAR). The subject matter of the five-week conference is arranged so that many who cannot attend the entire conference can advantageously come for one or more of the weeks. Iowa State College is giving the Conference financial support. Publication in book form is intended.

The plan of the program is that each morning a biologist will present a problem, outline the objectives, describe techniques suitable for the experiment and analysis. A paired statistician will discuss suitable experimental designs and statistical and mathematical methods for attacking the problem. These speakers will preside at a general discussion period of the same topic the same afternoon. Similar discussion periods proved quite helpful in clarifying the contents of papers presented at the morning sessions in the Heterosis Conference at Ames the summer of 1950. Evening discussion groups or workshop meetings are also possible.

The program is tentatively arranged in five somewhat separate weekly units as follows:

- First week: Development of Quantitative Biology
- Second week: Specification of Populations and Their Processes
- Third week: The Estimation of Populations
- Fourth week: Individual Growth
- Fifth week: Biomathematical Mechanisms Within the Individual and Species

Invited speakers include: Edgar Anderson, Geoffrey Beall, Joseph Berkson, Chester I. Bliss, P. W. Bridgman, Samuel Brody, C. West Churchman, William G. Cochran, C. C. Cockerham, Jerome Cornfield, Charles W. Cotterman, James F. Crow, S. L. Crump, D. B. DeLury, Gordon E. Dickerson, Harold F. Down, A. M. Dutton, W. T. Federer, Robert P. Gage, C. B. Godbey, A. A. Hasel, P. G. Homeyer, John W. Hopkins, H. Hotelling, S. Isaacson, O. Kempthorne, H. H. Kramer, Warren Leonard, Howard Levene, H. L. Lucas, S. E. Luria, J. L. Lush, William G. Madow, Walter M. Meyer, Lloyd Miller, H. J. Muller, H. C. Murphy, Jerzy Neyman, H. W. Norton, Thomas Park, N. Rashevsky, A. S. Rosenblueth, L. W. Scattergood, Franz Schrader, John P. Scott, G. W. Snedecor, G. W. Stewart, P. C. Tang, D. J. Thompson, John W. Tukey, A. S. Wiener, Norbert Wiener, Frank Wilcoxon, Edwin B. Wilson, Sewall Wright, M. R. Zelle, J. A. Zoellner. Early responses indicate that most of these can take part. Some revision of the topic and of their time arrangement will doubtless be necessary when replies have been received from all.

It is expected that the Conference will be of interest to advanced undergraduates, graduate students, and to research workers in the various biological sciences and statisticians who are interested in statistics as a research tool. Some graduate credit in Statistics will be allowed for attendance and study during the Conference.

Rooms will be available in the college dormitories at the usual rates. For more detailed information write: T. A. Bancroft, Director, Statistical Laboratory, Iowa State College, Ames, Iowa.

*Has had some
revision*

BIOSTATISTICS CONFERENCE

To be held at Iowa State College
June 16-July 23, 1952

Proposed Program

Quantitative Methods in Biology

First Week: Development of Quantitative Biology

- (1) Biometry, its makers and concepts
- (2) Mathematics and statistics in quantitative biology

Techniques Session I: Fitting of growth curves

- (3) Correlation and causation as biometric concepts
- (4) Philosophy of experimentation

Techniques Session II: Linear regression

- (5) General survey of experimental designs

Second Week: Specification of Populations and Their Processes

- (1) Problems in classifying animate populations
- (2) Breeding structure of populations

Techniques Session III: Discriminant functions

- (3) Time changes in populations
- (4) Competition and other interactions between populations

Techniques Session IV: Estimation and tests in entomological research

- (5) Analysis of genetic and population data in viruses and bacteria

Third Week: The Estimation of Populations

- (1) Methodology in sampling human populations
- (2) Problems of forest inventory for stand, growth and yield

Techniques Session V: Estimation of a biological population

- (3) Estimating wildlife and parasite populations

Techniques Session VI: An example of the use of sequential analysis

- (4) Estimating gene frequencies in non-experimental populations

Techniques Session VII: Estimation of gene frequency in human population

Third Week: (continued)

- (5) Linkage estimation from single generation data and from chromosome interchange

Fourth Week: Individual Growth

- (1) Cell growth and division
- (2) Taste discrimination problems

Techniques Session VIII: Bacteriological assay

- (3) Individual growth in economic animals
- (4) Measurement and comparison of toxicities: the quantal response
- (5) Insecticidal and fungicidal assay

Techniques Session IX: Biological assay with quantal response

Fifth Week: Biomathematical Mechanisms Within the Individual and Species

- (1) Servomechanisms in nerve functioning
- (2) Research in animal behavior and factor analysis
- (3) Biological and statistical utilization of genetic sub-groups such as identical twins, clones, etc.
- (4) Mathematical and biological interpretation of radiation effects on genes, chromosomes and the functioning of body cells
- (5) Mathematical interpretation of evolutionary processes

Committees

Biometrics Section of the American Statistical Association:

J. W. Gowen, Ames, Chairman; A. G. Steinberg, Mayo Clinic, Rochester;
Gertrude Cox, North Carolina State College, Raleigh;
W. T. Federer, Cornell University, Ithaca.

Local:

Program: O. Kempthorne, Chairman; J. W. Gowen, J. L. Lush; T. A. Bancroft

Arrangements: T. A. Bancroft, Chairman; L. G. Honeyar; G. W. Snedecor;
A. J. Nordskog; K. D. Carlinder; J. B. Loomis